



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,371	04/30/2001	Keld Kaltoft	KALTOFT 1	2534

1444 7590 06/13/2003

BROWDY AND NEIMARK, P.L.L.C.  
624 NINTH STREET, NW  
SUITE 300  
WASHINGTON, DC 20001-5303

EXAMINER
----------

SAUNDERS, DAVID A

ART UNIT	PAPER NUMBER
----------	--------------

1644

DATE MAILED: 06/13/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

720371

Applicant(s)

KALTOFT et al

Examiner

SAUNDERS

Group Art Unit

1644

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- ☒ Responsive to communication(s) filed on 2/24/03.
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-48, 51-59 is/are pending in the application.
- Of the above claim(s) 1-39, 41-42, 50-59 is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 40, 43-48 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☒ Claim(s) 1-48, 51-59 are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
  - ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
  - ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.
  - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

\*Certified copies not received: \_\_\_\_\_.

## Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

Office Action Summary

Art Unit: 1644

Claims 1-48 and 50-59 are pending.

Applicant's election with traverse of Group II (claims 40-48) in Paper No. 12 is acknowledged. The traversal is on the ground(s) that the composition of Group II are patentable and that Groups I and III define methods of using the compositions of Group II. This is not found persuasive because assuming that the compositions of Group II are patentable in the U.S., applicant would at most be entitled to an examination of Groups I and II, since Unity of Invention would involve one recited composition(s) and the first recited method of use thereof. Further, applicant's argument that the composition of elected Group II is patentable is a mere conclusionary statement, since the claims have not been examined in the U.S.

The requirement is still deemed proper and is therefore made FINAL.

Applicant's election of cytotoxic T-cells as the species for examination is noted. Claims 40 and 43-48 read upon the elected invention.

Claims 41-42 have been withdrawn as directed to a non elected species.

Claims 40 and 43-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 40 depends from a non elected claim. Claim 1, if it were incorporated into claim 40, is overly verbose by failing to set forth the invention in a concise, straight forward manner. For example step (a) should recite "human" instead of "mammal" and the last line of claim 1 should be deleted.

Art Unit: 1644

The term "continuous" in claim 40 is a relative term which renders the claim indefinite. The term "continuous" is indefinite because applicant's disclosure defines the term at page 9 as cells having a half-life span of at least 40 P.D. Since 40 P.D. is at what is typically taken as the "Hayflick limit", it is not clear whether applicant's invention is defined in terms of anything out of the ordinary; one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 47 has an improper Markush group after "selected from" applicant must insert -- the group consisting of--.

Claim 48 is indefinite by reciting "attenuated" because it is not clear what cellular function(s) has been "attenuated".

In claim 44 the term "vaccine" is unclear, because this term conventionally means a composition intended to induce an immune response against the composition per se. It appears rather, that applicant intends to use the T-cells in adoptive immunotherapy and does not intend to raise an immune response thereto.

Before examination over the prior art the examiner notes the following with respect to the claims and interpretation thereof:

The term "continuous" is relative and carries no weight--see 112, second rejection above.

The term "T-cell line" is reasonably interpreted, according to art convention, as not requiring clonality. However, clonality is reasonably encompassed by the term, given its broadest interpretation.

Art Unit: 1644

The claims have no quantitative limitations as to the number of cells. A T-cell population of any size anticipates. Considerations of what size of cell population might be obtained are considerations of intended use and carry no weight for distinguishing the composition pre se.

A product is a product no matter what method was used to produce it. Various treatments of the cells in vitro, various differences in what might be added to the media are considered to provide for no patentable distinction of the resulting cell composition, absent a showing of some material difference in the nature of the product produced.

The term "vaccine" will be given no weight. This is an intended (or unintended; see 112, 2nd supra) use. Any composition of cells intended to be injected will be considered a vaccine.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United

Art Unit: 1644

States and was published under Article 21(2) of such treaty in the English language.

Claims 40 and 43-46 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Riddell et al. (5,827,642 ref. AB).

Riddell et al. teach expansion of human antigen-specific, cytotoxic T-cells grown by stimulation with IL-2 and anti-CD3 (consistent with "two factors which promote T-cell growth" as disclosed at instant pp 11-12). Claims 45-46 are included, since the irradiated allogenic feeder cells would provide stimulation by alloantigens. Claim 48 is included because the T-cells can enter a resting ("attenuated") state upon withdrawal of the IL-2 and anti-CD3.

Claims 40 and 43-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Haberman (5,188,959, ref. AA).

Haberman shows culturing of antigen-specific, cytotoxic T-cells grown in a medium with IL-2 alone or with other cytokines. The taught method includes the expression of TILs, which are within the scope applicant's T-cells (instant pp. 32+). Claims 45-46 are included because the "reactivating" step of Haberman can involve culturing with irradiated PBMC, which can be from a

Art Unit: 1644

heterologous (i.e. allogeneics) donor; see col. 6, lines 53-68 and col. 23, lines 63-66.

Claims 40, 44-46 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Liu et al. (WO88/07077 , ref. AE).

Liu et al. teach a method of preparing antigen-specific, cytotoxic T-cells. See pages 11-14, for example. The protocol at page 12 is indistinguishable from applicant's all inclusive disclosure. Therefore the resulting cellular product is considered the same as applicant's. Claim 48 is rejected, since the T-cells of Liu et al. can be "rested" (page 29).

Claims 40 and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaltoft et al. (1995, ref. AU).

The reference has been discussed at instant specification page 4. The T-cells obtained by Kaltoff et al., exceed the "Hayflick limit" in their proliferation. Though the authors may not have realized what they had, they had what is now claimed as a composition.

Claims 40 and 43-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Boel et al. (5,877,017).

Art Unit: 1644

Boel et al. show cytotoxic T-cell clones against melanoma cells. These T-cell clones were isolated from a patient. What applicant claims encompasses any cytotoxic T-cell clone.

Claims 40 and 43-44 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith et al. (US 2002/0034819).

Smith et al. show expansion of a large number of T-cells, including TILs, via continuous exchange of media. See especially Example 1. The expansion potential of the cells of Smith et al. exceeds the Hayflick limit.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 40 and 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riddell et al. or Haberman either in view of Smith et al.

The primary references have been cited supra under 102. In the event applicant considers the number of PDs attainable to be an issue relevant to the claims 8, the obviousness rejection is stated on the basis that it would have been obvious to expand the



Art Unit: 1644

cells of Riddell et al. or Haberman by the rapid medium exchange method of Smith et al. in order to obtain a larger number of cells for treatment.

Journal references for the IDS submitted on 5/30/01 have not been considered. These were not supplied or have been lost. Likewise the IPEA opinion was not supplied or has been lost. Submission of these is required.

The claims are so vague and unfocused that the examiner sees no point in citing more references at present.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Saunders, Ph.D., whose telephone number is (703) 308-3976. The examiner can normally be reached on Monday-Thursday from 8:00 a.m. to 5:30 p.m. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan, can be reached on (703) 308-3973. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242.

Art Unit: 1644

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

D. Saunders:jmr

June 03, 2003

*David A. Saunders*  
DAVID SAUNDERS  
PRIMARY EXAMINER  
ART UNIT ~~182~~ 1644

D. Saunders:jmr

June 03, 2003